Section

G

Part No. 6

Highway Crossing Gates

Mechanism Replacement Parts

WESTERN RAILROAD SUPPLY COMPANY

DIVISION OF WESTERN INDUSTRIES, INC.

MANUFACTURERS AND DISTRIBUTORS

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PLATE G-610

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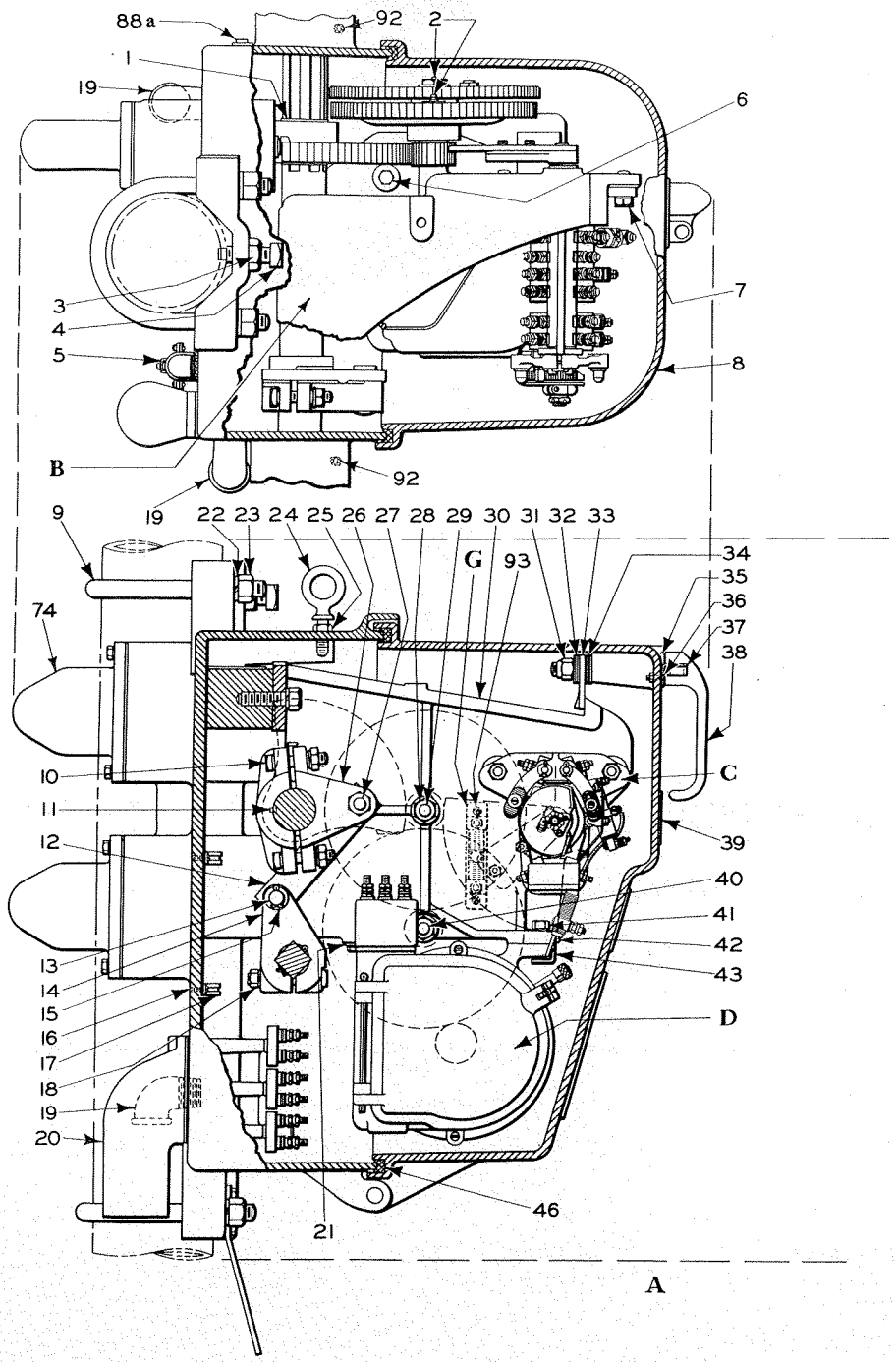
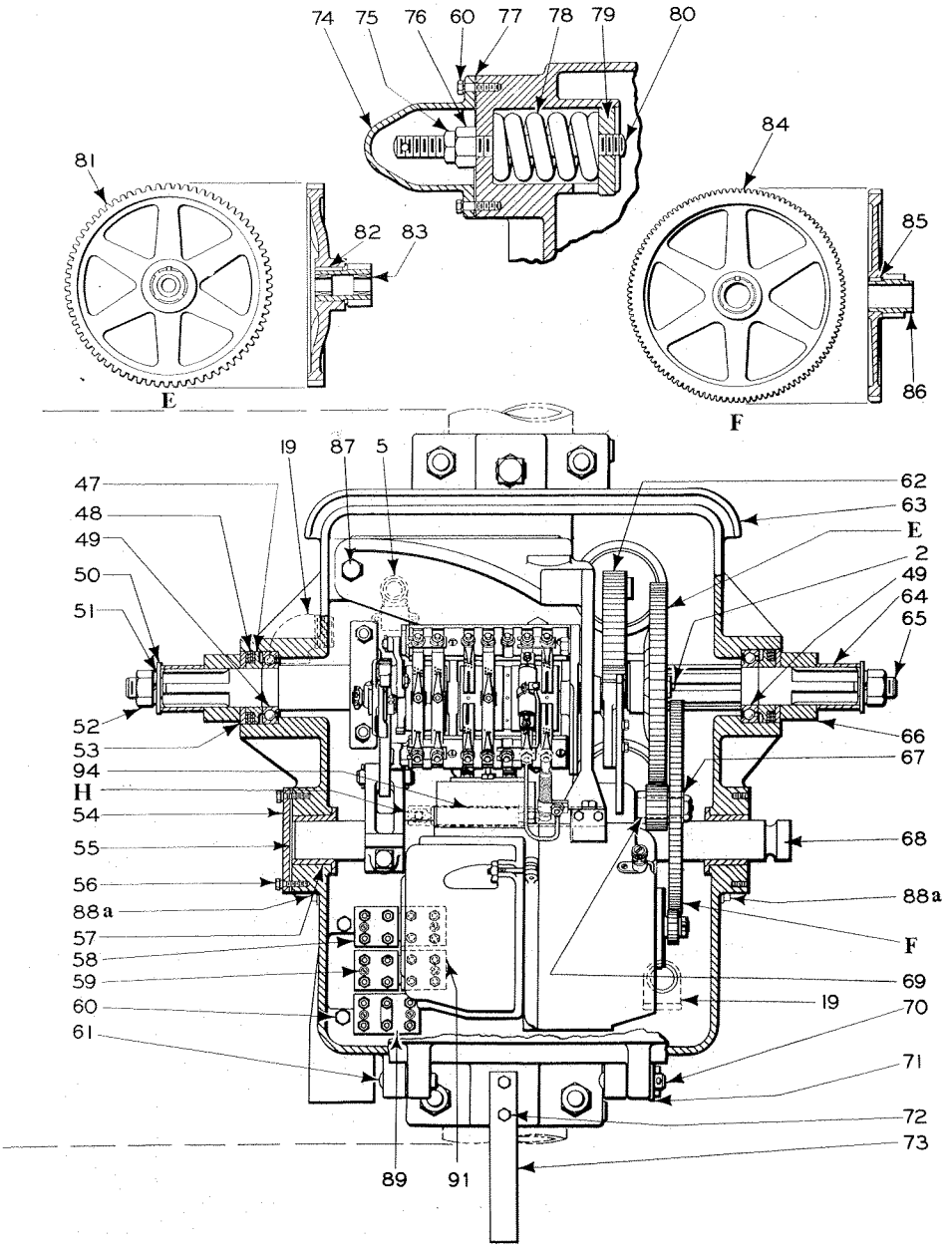


TYPE B CROSSING GATE MECHANISMS



TYPE B CROSSING GATE MECHANISMS

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanisms and Detail Parts

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
A	Type B Crossing Gate Mechanism Complete, for roadway arm only (without sidewalk arm shaft) with 12-20 volt d-c. motor and "U" bolts for mounting to 5" I.D. pipe post. Does not include resistor, heater or counter.	3566-121
A1	Type B Crossing Gate Mechanism Complete, for roadway and sidewalk arms, with 12-20 volt d-c. motor and "U" bolts for mounting to 5" I.D. pipe post. Does not include resistor, heater or counter.	3566-122
B	Mechanism Frame Complete, with motor, circuit controller, gears and studs all assembled to frame Fig. 30.	59887 Gr. 1
C	Circuit Controller Complete. For details and order references see Plate G-620.	34610-3
D	Motor Complete, with hold-clear assembly, 12-20 volts. For details and order references see Plate G-632.	29890-9 Gr. 2
E	Main Intermediate Gear Complete, 72 teeth, with pinion having 10 teeth.	29964-3 Gr. 1
F	First Intermediate Gear Complete, 116 teeth, with pinion having 14 teeth	29965-1 Gr. 2
G	Resistor, adjustable, resistance 1.4 ohms, adjustable in steps of .069 ohms	46450-23 Gr. 1
H	Heater Complete, 25 watts, 120 volts, includes all parts for mounting	56090-17 Gr. 1
1	Retaining Ring, for sector	5713-29
2	Oiler, ¼" drive for studs Figs. 29 and 40, 67½ degree, two required	34232-43
3	Nut, ¾" - 10 hex., for screw Fig. 4	4364
4	Screw, ¾" - 10 x 2-½" dog pt., for locking mechanism to pole	6954-7

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
DETAIL PARTS

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
5	Connector, ¾″ x 90°	44515-39
6	Screw, ⅜″ - 16 special, for mounting motor	56062-2
7	Screw, ½″ - 13 x 1¼″ hex. hd., with lock washer, for mounting circuit controller	3343-4 091-7
8	Cover Complete, for mechanism case, includes handle, gasket and name plate Fig. 39	59888 Gr. 1
8a	Cover Complete, for mechanism case, includes gasket and name plate Fig. 39 only	59888 Gr. 2
9	"U" Bolt, ¾″ - 10, for fastening mechanism to 5″ I.D. pipe	29953
10	Bolt, ½″ - 13 x 2½″ sq. hd., with hex. nut and lock washer, for crank Fig. 26	092-2 091-7
11	Woodruff Key #21, for fastening crank Fig. 26 to shaft	0387
12	Link, for cranks	734-33
13	Pin, for fastening link Fig. 12 to crank Fig. 14	504-396
14	Crank, as shown	57520-1
15	Washer, for pin Fig. 13	2400-1
16	Screw, No. 10-32 x ½″ rd. hd., with lock washer, for cleats Fig. 17	3044-9 53029-7
17	Cleat, for wires	54108-8
18	Bolt, ½″ - 13 x 3½″ hex. hd., with hex. nut and lock washer, for crank Fig. 14	0439-1 091-7
19	Ventilator, for case, screened, 1″ street ell	52981 Gr. 1
20	Coupling, for 2″ flexible metallic conduit	45689-124

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
DETAIL PARTS

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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
21	Bracket, for supporting motor while bolting in place	32168-37
22	Lock Washer, for "U" bolt	029
23	Nut, ¾" - 10 hex., for "U" bolt	0272
24	Eye Bolt, ½", for mechanism	2102
25	Nut, ½" - 13 hex., for eye bolt	41895
26	Crank, as shown	57520-2
27	Stud, with hex. nut and lock washer, for fastening link Fig. 12 to crank Fig. 26	441-602 645-7 0113-2
28	Nut, ⅝" - 18 x 1" hex., with lock washer, for studs Figs. 27, 29 and 40	645-7 0113-2
29	Stud, for gear Fig. E, for mechanisms with serial no's. up to 2500	42830-64
29a	As above, except for mechanisms with serial no's. 2501 and up	42830-71
30	Frame only, for mechanism	59839
	NOTE — When ordering frame for the original design mechanism, new stud Fig. 29a is required.	
31	Nut, ⅝" - 18 hex., for handle	42333-11
32	Washer, 1/16" tk., with round hole, for handle	39113-3
33	Latch, for handle	53718-25
34	Washer, 1/16" tk., with square hole, for handle	7838-4
35	Washer, rubber, for handle	1333-21
36	Screw, No. 10-32 x ⅝" fl. hd., with hex. nut, for clip ..	6727-10 38239-1
37	Clip, for padlock	53721-76
38	Handle Complete, for cover, includes latch, hex. nut, rubber and metal washers	59889 Gr. 1
38a	Handle, only, with shaft	53720-15 Gr. 2
39	Name Plate, with drive screws, for mechanism	401-662 52681-12

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
DETAIL PARTS

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
40	Stud, for gear Fig. F	42830-65
41	Screw, 3/8" - 16 hex. hd., for mounting motor	30049
42	Screw, 1/4" - 20 x 1/2" hex. hd., with lock washer, for brackets Figs. 21 and 43	14078-1 0510-1
43	Bracket, for supporting motor while bolting in place	32168-38
46	Gasket, 7'-0" long, for cover	43460-3
47	Ring, for bearings Fig. 49	59838
48	Gasket, felt, for rings	13014-293
49	Ball Bearing, for each end of shaft	49536-78
50	Washer, for each end of shaft	0393-4
51	Lock Washer, for nut Fig. 52	0426-3
52	Nut, 7/8" - 9 hex., for each end of shaft	523-11
53	Washer, for each end of shaft	626-145
54	Plate, for side of case	59215-1
55	Gasket, for plate Fig. 54	13014-291
56	Screw, 1/4" - 20 x 7/8" hex. hd., with lock washer, for fastening plate Fig. 54 to case	29767-1 0510-1
57	Bushing, for each end of shaft Fig. 68	8942-96
58	Terminal Block Complete, 4 way with tags marked 1 to 8	46048-54 Gr. 1
59	Screw, No. 10 - 32 x 3/4" rd. hd., with lock washer, for mounting terminal blocks	3044-13 53029-7
60	Screw, 3/8" - 16 x 1 1/4" hex. hd., with lock washer, for mounting coupling Fig. 20 and cap Fig. 74	2472-12 0569-2
61	Hinge Pin, for door, for use in position shown	51358-5

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
DETAIL PARTS

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
62	Sector, as shown	29830-7
63	Case, only, for mechanism	59837
64	Spacer, for each end of shaft	33645-14
65	Shaft, for roadway arm	57524-2
66	Spacer, for each end of shaft	35463-8
67	Washer, for studs Figs. 29 and 40	7626-3
68	Shaft, for sidewalk arm	29839-7
69	Roller Bearing, for pinion on gear Fig. F	29998 Gr. 2
70	Hinge Pin, for door, for use in position shown	51358-6
71	Washer, for hinge pin Fig. 70	2400-1
72	Screw, ⅜″ - 16 x ¾″ hex. hd., with lock washer, for fastening spring Fig. 73 to case	0395-7 0569-2
73	Spring, stop for cover	16111-120
74	Cap, for stud Fig. 80	35491-27
75	Nut, 1″ - 8 x ½″ tk. hex., for locking nut Fig. 76	1047-16
76	Nut, 1″ - 8 x 1″ tk. hex., for stud Fig. 80	0290-1
77	Gasket, for caps Fig. 74	13014-292
78	Spring, as shown	786-294
79	Nut, 1″ - 8 special, for stud Fig. 80	49513-3
80	Stud, 1″ - 8 x 10½″ long, for spring	879-74
81	Gear and Pinion, machined for needle bearing	29831-3 29840-2
82	Key, 3/16″ x 3/16″ x 1⅛″, for fastening pinion to gear	1153-1

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
DETAIL PARTS

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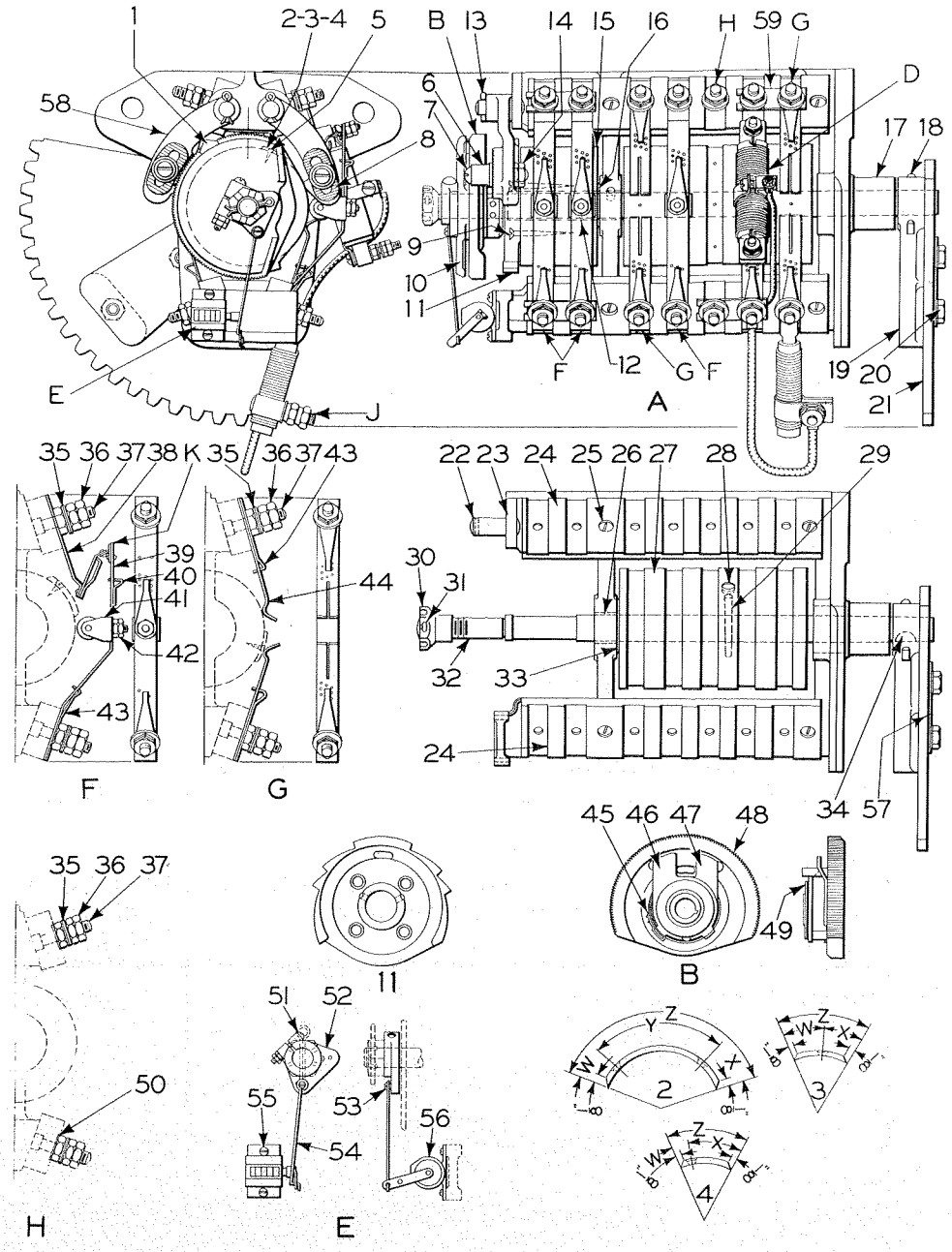
Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
83	Needle Bearing, for gear	57529-3
84	Gear, only, 116 teeth, for gear Fig. F.	29832-2
85	Key, 3/16″ x 3/16″ x ½″, for fastening pinion to gear	29848
86	Pinion, only, 14 teeth for gear Fig. F	29841
87	Screw, ⅝″ - 11 x 2″ hex. hd., with lock washer, for fastening frame to case	44987 0113-2
88a	Pipe Plug, ½″	0678-2
89	Terminal Block Complete, 3 way with tags marked 17 to 22	46048-55 Gr. 1
91	Terminal Block Complete, 4 way, with tags marked from 9 to 16	46048-54 Gr. 2
92	Oiler, ¼″ drive, straight, four req'd., for shafts Figs. 65 and 68	34232-21
93	Screw, No. 14-24 x 2″ rd. hd., with hex. nuts and washers, for mounting resistor, two required	360 42839-5 1225-2 29728
94	Resistor, only, for heater	55291-4



CIRCUIT CONTROLLER

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
CIRCUIT CONTROLLER
DETAIL PARTS

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
A	Circuit Controller Complete, for Type B Gate Mechanism, does not include counter	34610-3
B	Trip Plate Complete, as shown	34616 Gr. 1
D	Snubbing Resistor, 0 to 5.0 ohms	55945-6 Gr. 2
E	Counter Complete, as shown	38408 Gr. 1
F	Operating Contact Group Complete as, shown	39927-2 Gr. 2
G	Contact Group Complete, as shown	39927 Gr. 3
H	Binding Post Group Complete, as shown	39927-10 Gr. 2
J	Snubbing Resistor, 0 to 1.1 ohms	56850
K	Arm Complete, for contact group Fig. F, includes 1-39, 1-40, 1-41 and 2-42	35321-2 Gr. 2
1	Trip Finger, for tripping latch arm	34655
2	Segment	See Table at end of this list for Segments
3	Segment	
4	Segment	
5	Wood Screw, No. 6 x ½" fl. hd., for fastening segments to commutator	30127
5a	as above, except No. 6 x ½" spl. hd., for fastening segments to commutator	44734
6	Knob, for latch arm	29969
7	Screw, No. 14-24 x 1¼" rd. hd., for fastening knob to latch arm	0660-1
8	Latch Arm, only, right hand	30029-9

PLATE G-620

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
CIRCUIT CONTROLLER
DETAIL PARTS

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
9	Wood Screw, No. 8 x 1½″ fl. hd., for fastening latch plate to commutator	43669
10	Plate, for trip finger	34651
11	Latch Plate	34649-1
12	Bushing, for commutator	29977-1
13	Cotter Pin, 3/32″ x ⅝″, for stud Fig. 22	035
14	Nut, No. 14-24 hex., for screw Fig. 7	46989-2
15	Commutator, two-way, for circuit controller	34652
16	Washer, 1″ O.D., for use between frame and commutator Fig. 15	47769
17	Bearing, for shaft	40724-7
18	Cotter Pin, 3/16″ x 1¾″, for arm	045
19	Arm, for sector	59844
20	Screw, 5/16″ - 18 x ¾″ hex. hd., with lock washer for fastening sector to arm	0441-3 0623-1
21	Sector, for circuit controller	29830-6
22	Stud, for trip arm	34657
23	Frame, only	34648-1
24	Terminal Block, only	43273-4
25	Screw, No. 10-32 x ⅝″ rd. hd., for mounting contact blocks	3044-10
26	Bushing, for shaft	34663
27	Commutator, five-way, for circuit controller	29972

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
CIRCUIT CONTROLLER
DETAIL PARTS

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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
28	Set Screw, 5/16″ - 18 x ¼″, for locking pin Fig. 29	3018-2
29	Taper Pin, #4 x 2″ lg., for fastening commutator Fig. 27 to shaft	48650-1
30	Castle Nut, ½″ - 13, for shaft	34659
31	Cotter Pin, ⅛″ x 1¼″, for nut Fig. 30	041
32	Shaft, only, for circuit controller	34647-4
33	Washer, 1⅜″ O.D., for use between frame and commutator Fig. 27	35133
34	Woodruff Key #3, for fastening arm to shaft	027
35	Washer, for terminal posts	1225-2
36	Nut, No. 14-24 hex., for terminal posts	42839-1
37	Screw, No. 14-24 x 1¼″ sq. hd., used as terminal post	350-1
38	Arm Complete, for contact group Fig. F, includes support, stop and contact riveted together	35466-2 Gr. 2
39	Contact Spring, with contact, for arm Fig. K	35330-2 Gr. 2
40	Adjustor, for contact spring Fig. 39	29967-1
41	Holder Complete, with stud, roller and pin	42470 Gr. 1
42	Nut, No. 8-32 hex., for stud on holder	9188
43	Adjustor, for arm Fig. K and spring Fig. 44	29967
44	Spring, only, for contact group Fig. G	29966
45	Spring, for trip plate	34618
46	Plate Complete, with stud, for spring Fig. 45	34619 Gr. 1

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
CIRCUIT CONTROLLER
DETAIL PARTS

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
47	Plate, only, for trip plate	34617-1
48	Trip Plate, only	34650-1
49	Washer, for spring	35133
50	Washer, for binding group Fig. H	8148
51	Screw, No. 10-32 x 1¼″ rd. hd., with hex. nuts, for fastening clamp Fig. 52 to nut Fig. 30	3044-17 38239-1
52	Clamp, only, for counter	34660
53	Screw, No. 6-32 x ⅜″ rd. hd., for fastening rod Fig. 54 to clamp	2426-8
54	Rod, only, for operating counter	34666
55	Screw, No. 4-36 x ⅜″ rd. hd., for fastening counter to frame	29107
56	Counter, only	26674
57	Plate Washer, for screws Fig. 20	1601-143
58	Latch Arm only, left-hand	30029-11
59	Connector, four required	4906-148

DETAILS OF SEGMENTS

	Dim. W	Dim. X	Dim. Y	Dim. Z	Thickness of Segment	
2	21/32″ 25°	33/64″ 20°	1 11/64″ 45°	2 11/32″ 90°	.1019″	29990-2
2a	55/64″ 33°	1 3/64″ 40°	1 11/64″ 45°	3 5/64″ 118°	.1019″	29990-3
2b	17/64″ 12½°	23/32″ 25°	2 11/32″ 90°	3 21/64″ 127½°	.1019″	29990-25

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism
CIRCUIT CONTROLLER
DETAIL PARTS

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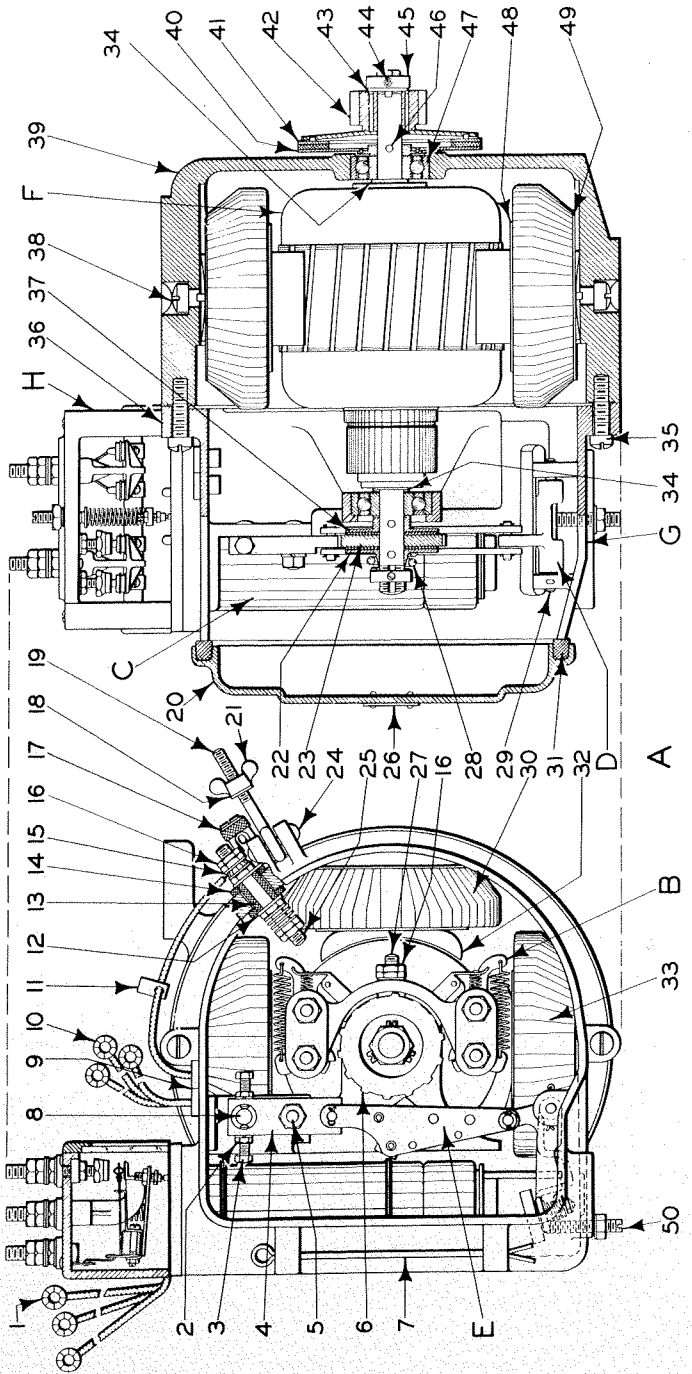
Fig. No.	Description					Drawing Reference
	Order by plate, figure number and description DETAILS OF SEGMENTS (Continued)					
	Dim. W	Dim. X	Dim. Y	Dim. Z	Thickness of Segment	
3	19/32" 22½°	19/32" 22½°		1 11/64" 45°	.1019"	29990-7
3a	21/32" 25°	23/32" 27½°		1 3/8" 52½°	.1019"	29990-13
3b	21/32" 25°	29/32" 35°		1 9/16" 60°	.1019"	29990-59
4	21/64" 12½°	1 1/8" 42½°		1 29/64" 55°	1/8"	29990-16
4a	21/64" 12½°	1" 37½°		1 21/64" 50°	1/8"	29990-15

NOTE: All dimensions based on outside circumference.



MOTOR AND HOLD-CLEAR ASSEMBLY

For Replacement Parts Only

WESTERN. RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism

MOTOR AND HOLD-CLEAR ASSEMBLY DETAIL PARTS

For Replacement Parts Only

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
A	Motor Complete, with hold-clear assembly, 12-20 volts, direct-current (For replacement Parts only)	29890-8 Gr. 2
B	Brush Holder Complete. For details and order references see Plate G-636, Fig. A	37930-1 Gr. 10
C	Hold-Clear Magnet Complete with two 150 ohm holding coils. For details and order references see Plate G-636, Fig. C	49025-3 Gr. 7
D	Hold-Clear Armature Complete. For details and order references see Plate G-636, Fig. D ..... When ordering replacement Fig. D, also order Stop Screw Fig. 50.	49021-2 Gr. 2
E	Link Complete. For details and order references see Plate G-636, Fig. B	32666-3 Gr. 2
F	Armature Complete, for motor	29893-1 Gr. 6
G	Bearing Bracket, with cover, gasket, stud for brush holder bracket, eyebolt, wing nut, pins, nuts and washers (1-7, 1-18, 1-19, 1-20, 1-21, 1-24, 1-27, 1-29, 1-31, and 1-36)	39057-1 Gr. 9
H	Contactor Complete, For details and order references see Plate G-636, Fig. E	57440 Gr. 4
1	Eyelet, for ¼" and 5/16" posts and No. 14 wire, has clamping ears for 3/16" dia. insulation	17819-3
2	Nut, No. 10-32, hex. with washer, for screw Fig. 3	577-8 53029-7
3	Screw, No. 10-32 x ⅝" hex. hd., for fastening hanger block to stud Fig. 8	13006-16
4	Hanger Block, for link Fig. E	32686-1
5	Stud, ¼" - 28, with hex. nut and lock washer, for mounting hanger block	9065-6 1472-4 0510-1

PLATE G-630

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism

MOTOR AND HOLD-CLEAR ASSEMBLY DETAIL PARTS

For Replacement Parts Only

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
6	Hold-Clear Disc, for retaining mechanism	43128-6
7	Cotter Pin, 3/16" x 6¼", hinge for cover	35622
8	Stud, for fastening hanger block to bearing bracket	441-450
9	Bushing, fibre, for lead wires	27371
10	Eyelet, for ¼" and 5/16" posts and No. 14 wire, with clamping ears for 5/16" dia. insulation	17819-4
11	Tag, for marking wires. Specify marking required	44983-24
12	Washer, for binding post	14682-2
13	Bushing, fibre, for binding post	7350-196
14	Washer, fibre, for binding post	493-187
15	Washer, for binding post	1225-2
16	Nut, No. 14-24 hex., for binding post also for mounting brush holder	46989-2
17	Oiler Complete, for motor, includes bracket, tube and screw for mounting	48674-1 Gr. 2 3044-5
18	Washer, for wing nut	22890
19	Eyebolt, for cover	29963-2
20	Cover, only, for case	32662-2
21	Wing Nut, for eyebolt	29995
22	Cone, for hold-clear disc.	30077-4
23	Friction Disc, for cone	45557-30
24	Pin, for fastening eyebolt to frame	7568

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism

MOTOR AND HOLD-CLEAR ASSEMBLY DETAIL PARTS

For Replacement Parts Only

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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
25	Screw, No. 14-24 x 2½" lg., headless, used as binding post	391-2
26	Name Plate, with escutchion pins	401-6 0738
27	Stud, with pin, for mounting brush holder	50613-1 4793-1
28	Spring, for friction cone Fig. 22	30506-3
29	Shaft, for armature support	32758
30	Field Coil Complete, double winding, two required	29999-7 Gr. 1
31	Gasket, 2' - 8" long, for cover	47436
32	Pole Piece, for motor	29864
33	Field Coil Complete, single winding, two required	29999-1 Gr. 13
34	Shim Washer	34254
35	Screw, 5/16" - 18 x 1¼" fil. hd., for fastening bearing bracket to motor frame	50499
36	Bearing Bracket, only, for motor	32661-7
37	Cone, for hold-clear disc.	30668-1
38	Screw, ⅜" - 16 x 1" fil. hd., for mounting pole pieces	19866
39	Frame, only, for motor	29825-5
40	Disc Complete, includes friction disc riveted in place	56786-1 Gr. 3

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism

MOTOR AND HOLD-CLEAR ASSEMBLY DETAIL PARTS

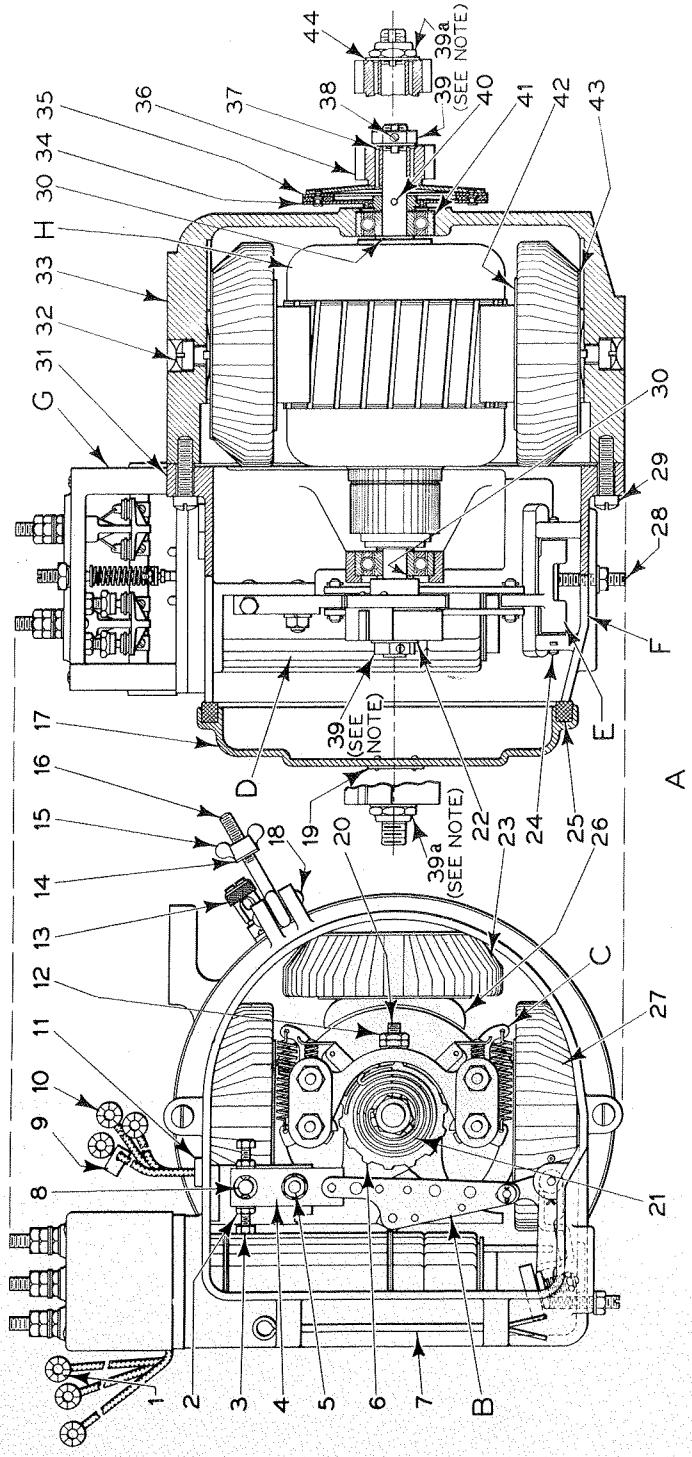
For Replacement Parts Only

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
41	Disc Complete, with eight studs riveted in place	56786-2 Gr. 1
42	Pinion Complete, with spring riveted in place	31336 Gr. 4
43	Washer, fibre, for nut	36149-5
44	Set Screw, No. 10-32, for nut	3018-35
45	Nut, ½" - 24 x ¼" tk. for holding pinion on shaft	1048-3
46	Pin, 5/32" dia. x 37/64", for shaft	500-33
47	Ball Bearing, for each end of shaft	47790
48	Washer, insulation for field coils	493-64
49	Washer, insulation for field coils	493-65
50	Screw, ¼" - 28 x 1 9/16", headless, with hex. nut and lock washer, for hold-clear armature	18140-5 1472-7 53029-2

MEMORANDUM

PLATE G-632



MOTOR AND HOLD-CLEAR ASSEMBLY

WESTERN RAILROAD SUPPLY COMPANY

Type B Crossing Gate Mechanism

MOTOR AND HOLD-CLEAR ASSEMBLY DETAIL PARTS

The detail parts shown in this plate also cover the 29890-9 Gr. 1 motor with the exception of Fig. E.

Drawing references are shown for convenience in checking shipping lists and invoices

Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
A	Motor Complete, with hold-clear assembly, 12-20 volts, direct current (see note above)	29890-9 Gr. 2
B	Link Complete. For details and order references see plate G-636, Fig. B	32666-3 Gr. 2
C	Brush Holder Complete. For details and order references see Plate G-636, Fig. A	37930-1 Gr. 10
D	Hold-Clear Magnet Complete, with two 150 ohm holding coils. For details and order references see Plate G-636, Fig. C	49025-3 Gr. 7
E	Hold-Clear Armature Complete. For details and order references see Plate G-636, Fig, D. When ordering replacement Fig. E, for motor 29890-9 Gr. 1, also order stop screw Fig. 28	49021-2 Gr. 2
F	Bearing Bracket, with cover, gasket, stud for brush holder bracket, eyebolt, wing nut, pins, nuts and washers (1-7, 1-14, 1-15, 1-16, 1-17, 1-18, 1-20, 1-24, 1-25, and 1-31)	39057-1 Gr. 9
G	Contactor Complete. For details and order references see Plate G-636, Fig. E	57440 Gr. 4
H	Armature Complete, for motor. When order replacement Fig. H, if nuts on each end are not the elastic stop type, two nuts Fig. 39a and lock washers Fig. 44 must also be ordered	29831-1 Gr. 6
1	Eyelet, for ¼" and 5/16" posts and No. 14 wire, has clamping ears for 3/16" dia. insulation	17819-3
2	Nut, No. 10-32, hex. with lock washer, for screw Fig. 3	577-8 53029-7
3	Screw, No. 10-32 x 5/8" hex. hd., for fastening hanger block to stud Fig. 8	13006-16

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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
4	Hanger Block, for link Fig. B	32686-1
5	Stud, ¼" - 28, with hex. nut and lock washer, for mounting hanger block	9065-6 1472-4 0510-1
6	Hold-Clear Disc Complete, for retaining mechanism	56786-3 Gr. 1
7	Cotter Pin, 3/16" x 6¼", hinge for cover	35622
8	Stud, for fastening hanger block to bearing bracket	441-450
9	Tag, for marking wires. Specify marking required	44983-24
10	Eyelet, for ¼" and 5/16" posts and No. 14 wire, with clamping ears for 5/16" dia. insulation	17819-4
11	Bushing, fibre, for lead wires	27371
12	Nut, No. 14-24 hex., for mounting brush holder	46989-2
13	Oiler Complete, for motor, includes bracket, tube, washer and screw for mounting	48674-1 Gr. 2 3044-9 1225-26
14	Washer, for wing nut	22890
15	Wing Nut, for eyebolt	29995
16	Eyebolt, for cover	29963-2
17	Cover, only, for case	32662-2
18	Pin, for fastening eyebolt to frame	7568
19	Name Plate, with escutcheon pins	401-6 0738
20	Stud, with pin, for mounting brush holder	50613-1 4793-1

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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
21	Spring, for hold-clear disc	34956-7
22	Bushing, for hold clear	21499
23	Field Coil Complete, double winding, two required	29999-7 Gr. 1
24	Shaft, for armature support	32758
25	Gasket, 2'-8" long, for cover	47436
26	Pole Piece, for motor	29864
27	Field Coil Complete, single winding, two required	29999-1 Gr. 13
28	Screw, ¼" - 28 x 1 9/16" headless, with hex. nut and lock washer, for hold-clear armature	18140-5 1472-6 53029-2
29	Screw, 5/16" - 18 x 1¼" fil. hd., for fastening bearing bracket to motor frame	50499
30	Shim Washer	34254
31	Bearing Bracket, only for motor	32661-7
32	Screw, ⅜" - 16 x 1" fil. hd., for mounting pole pieces	19866
33	Frame, only, for motor	29825-5
34	Disc Complete, includes friction disc riveted in place	56786-1 Gr. 3
35	Disc Complete, with eight studs riveted in place	56786-2 Gr. 1
36	Pinion Complete, with spring riveted in place	31336 Gr. 4
37	Washer, fibre, for nut	36149-5
38	Set Screw, No. 10-32, for nut	3018-35
39	Nut, ½" - 24, for ends of armature shaft	1048-3

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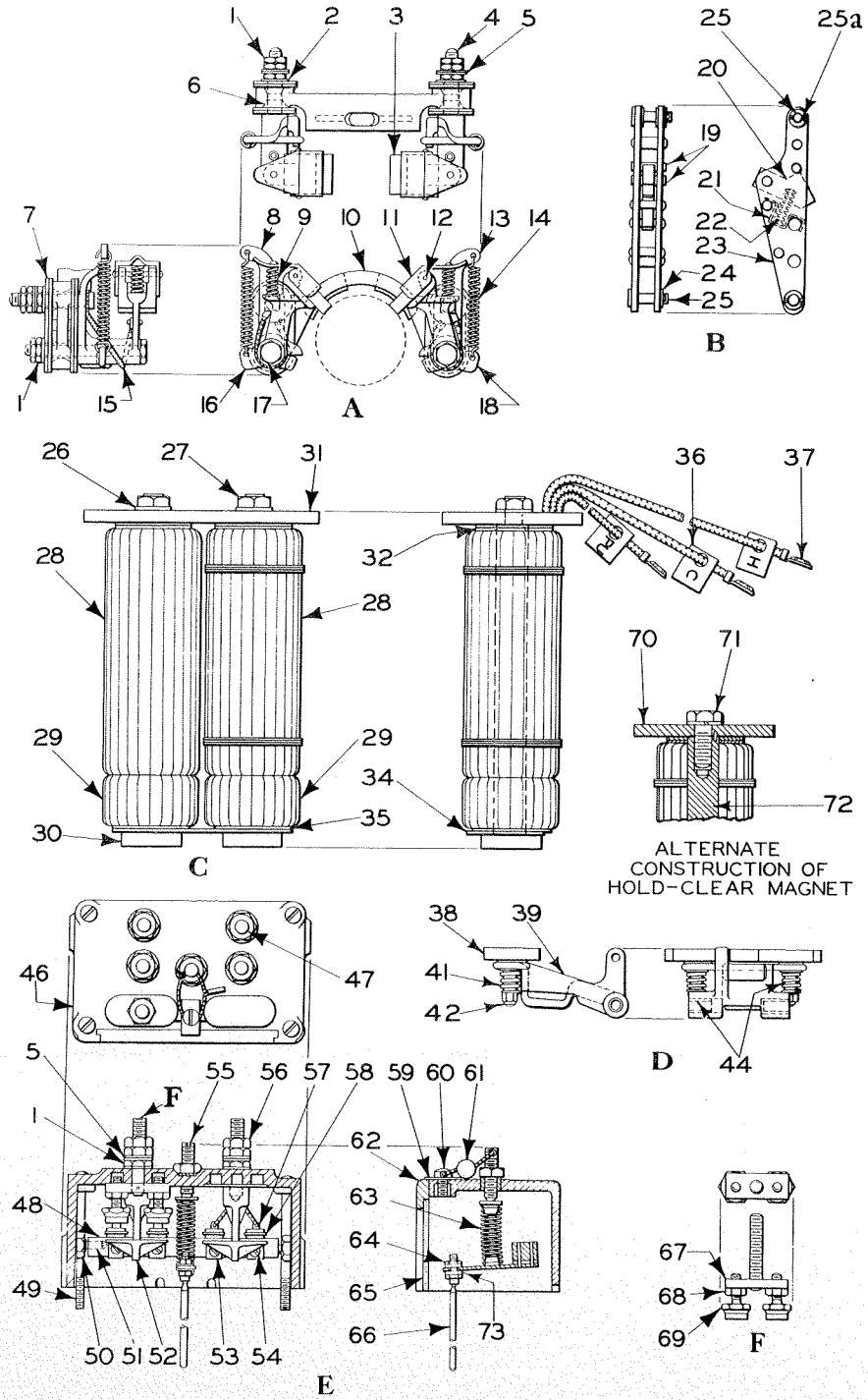
Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
39a	Nut, elastic stop ½"-20, for ends of armature shaft	42333-29
40	Pin, 5/32" dia. x 37/64", for shaft	500-33
41	Ball Bearing, for each end of shaft	47790
42	Washer, insulation for field coils	493-64
43	Washer, insulation for field coils	493-65
44	Lock Washer, key type, for nut Fig. 39a	29343-3

MEMORANDUM



MOTOR AND HOLD-CLEAR DETAIL PARTS

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MOTOR AND HOLD-CLEAR
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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
A	Brush Holder Complete, for motors shown on Plates G-630 and G-632	37930-1 Gr. 10
B	Link Complete, for motors shown on Plates G-630 and G-632	32666-3 Gr. 2
C	Hold-Clear Magnet Complete, with two 150 ohm holding coils, for motors shown on Plate G-630 and G-632	49025-3 Gr. 7
D	Armature Support Complete, for motors shown on Plates G-630 and G-632	49021-2 Gr. 2
	When ordering replacement Fig. D for motors 29890-8 Gr. 2 or -9 Gr. 1 also order stop screw Fig. 28 shown on Plate G-632.	
E	Contactor Complete, for motors shown on Plates G-630 and G-632	57440 Gr. 4
F	Contact Complete, includes screw, plate and contacts	57441 Gr. 1
1	Nut, No. 14-24 x 1/8" hex., for terminal posts Fig. 17	46989-2
2	Washer, for terminal posts	14682
3	Brush, only, for brush holder	37938-13
4	Screw, No. 14-24 x 1¾" sq. hd., for brush holder	350-5
5	Washer, for terminal posts	1225-2
6	Bushing, for screws Figs. 4 and 17	37976-3
7	Link, for brush holder	35505-54
8	Arm, lower, for brush holder	37931
9	Spring, for brush holder	37974
10	Bracket, only, for brush holder	37937-1
11	Cap Complete, for brush holder, includes stud for spring	50808 Gr. 1

PLATE G-636

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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
12	Pin, for fastening cap to lever	18142
13	Arm, upper, for brush holder	37932
14	Spring, for arms Figs. 8 and 13	37936
15	Connector, for brush holder	42760-4 Gr. 1
16	Lever, lower, for brush holder	37933
17	Screw, No. 14-24, for brush holder	37939-1
18	Lever, upper, for brush holder	37934
19	Roll Pin, for link	17188-1
20	Dog, only, for link	43650-10
21	Clip, for spring Fig. 22	30645-12
22	Spring, for dog	586-199
23	Link Complete, includes spacers and pins	32659-3 Gr. 1
24	Washer, for pin Fig. 25	42312-1
25	Pin, for link	1118-42
25a	Cotter Pin, for pin Fig. 25	0652
26	Lock Washer, for nut Fig. 27	53029-5
27	Nut, 3/8" - 16 x 3/8" hex., for core Fig. 30 (original design)	35519
28	Coil, holding, 150 ohms, for magnet	50626-1 Gr. 7
29	Coil, pickup, 13 ohms, out lead 2' - 5" long, for magnet	50625-1 Gr. 5
30	Core Complete, for magnet, includes cap and pin (original design)	49022-2 Gr. 2
31	Yoke, for cores (original design)	48844-1
32	Felt Washer, for top of coils	1533-15

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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
34	Plate, for bottom of magnet	35845-91
35	Washer, for bottom of coils	17546
36	Tag, for wires, specify marking required	44983-24
37	Eyelet, for ¼″ and 5/16″ posts and No. 14 wire, has clamping ears for 3/16″ dia. insulation	17819-3
38	Armature Complete, includes studs for springs Fig. 41	49020-4 Gr. 1
39	Armature Support Complete, includes bushings Fig. 44	33249-1 Gr. 2
41	Spring, for armature support	586-10
42	Nut, elastic stop, No. 10-32 hex., for studs on armature	42333-8
44	Bushing, for armature support and guide for springs	6714-234
46	Case, only, for contactor	57443
47	Screw, No. 14 - 24 x 1¼″ sq. hd., used as terminal post for contactor	350-1
48	Bar Complete, includes plate and spring seat	57252 Gr. 1
49	Screw, No. 8 - 32 x 2½″ fil. hd., for mounting contactor	28989-42
50	Nut, ¼″ - 28 x ⅛″ tk. hex., for trunnion screw Fig. 51	1472-8
51	Trunnion Screw, ¼″ - 28, bearing for bar Fig. 48	49522-20

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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
52	Lower Contact Complete, as shown, includes screw, support and contact	57444 Gr. 1
53	Stop, for contact Fig. 58	35470-48
54	Screw, No. 5 - 40 x ¾" fil. hd., with hex. nut and lock washer, for fastening stop and connector to bar Fig. 48	28876-4 54743-1 53029-26
55	Screw, No. 14-24, for spring Fig. 63	50313-3
56	Nut, No. 14-24 x 3/16" tk. hex., for terminal posts	42839-5
57	Connector Complete, for contactor	42760-105 Gr. 1
58	Contact Complete, for contactor, includes spring and contacts	13062-20 Gr. 2
59	Washer, for holding bar Fig. 62 in place	43083-6
60	Screw, No. 10-32 x 5/16" fil. hd., for washer Fig. 59	34456-5
61	Car Seal, for contactor	35285
62	Bar, for holding glass	57454
63	Spring, for bar Fig. 48	586-133
64	Nut, ⅛" - 56 x ⅛" tk. hex., for rod Fig. 66	12680-5
65	Glass, only, for contactor	56061-13
66	Rod Complete, includes stud, for operating contactor	57251 Gr. 2
67	Plate with stud, for contacts	15865 Gr. 1
68	Nut, No. 10-32 hex., for contacts	40796

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Fig. No.	Description	Drawing Reference
	Order by plate, figure number and description	
69	Contact, only	42799-7 Gr. 16
70	Yoke, as shown, for cores	48844-2
71	Screw, 5/16" - 24 x 7/8" hex. hd., with lock washer, for fastening cores Fig. 72 to yoke, Fig. 70	3440-20 53029-5
72	Core Complete, for magnet, includes cap and pin	49022-3 Gr. 1
73	Lock washer, bent-up, for nut Fig. 64	1601-151

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